

EXECUTIVE SUMMARY

AIRCRAFT ACCIDENT INVESTIGATION

MQ-1B, T/N 05-3140
GHAZNI, AFGHANISTAN
8 MAY 2009

On 8 May 2009, a multi-role unmanned aerial system (MQ-1B "Predator"), tail number (T/N) 05-3140, assigned to the 3rd Special Operations Squadron (3 SOS), Cannon AFB, New Mexico and forward deployed to the 62nd Expeditionary Reconnaissance Squadron (62 ERS), 451st Air Expeditionary Group (451 AEG), Joint Base Kandahar, Afghanistan, in support of OPERATION ENDURING FREEDOM (OEF), crashed into uninhabited terrain in the vicinity of (IVO) Ghazni, Afghanistan, at approximately 1115 Zulu (Z), and was severely damaged beyond economic repair (TAB B-3). There were no military or civilian casualties or fatalities. There was no damage to civilian property. Damage to military property was valued at \$4,588,281.00 (TAB P-3).

The mishap remote piloted aircraft (MRPA) was flying an armed intelligence, surveillance, reconnaissance (ISR) mission in support of OEF. The MRPA taxied and departed at approximately 0900 Z. Approximately two hours into flight the MRPA encountered icing conditions, turbulence, several LL events and a Right Wing Control Module (RWCM) transmitter (TX) failure message. The MRPA entered roll oscillations to the left and right and was unable to return to level flight. Ultimately, the MRPA rolled into a bank angle of approximately 110 degrees (110°) to the left, departed controlled flight and crashed.

At 1107:59Z, a RWCM TX failure message was indicated. A software chip tacked into place using Room Temperature Vulcanizing cement, RTV-162, to facilitate removal for re-programming and calibration updates, without risking damage to the entire circuit board, became partially dislodged due to vibrations and G-loading on the MQ-1B. The ailerons are controlled by the wing control modules.

The AIB president found clear and convincing evidence that the MRPA departed controlled flight after losing control of the right aileron due to the partially dislodged software chip. As the RWCM functionality became increasingly degraded, because of the partially dislodged software chip, the right aileron locked in a neutral position, and a combination of asymmetric loading (due to the munitions stored under the left wing) and turbulence, were significantly contributing factors that caused the MRPA to depart controlled flight resulting in the crash and subsequent severe damage beyond economical repair of the aircraft.

Under 10 U.S.C. 2254(d), any opinion of the accident investigators as to the cause of, or the factors contributing to, the accident set forth in the accident investigation report may not be considered as evidence in any civil or criminal proceeding arising from the accident, nor may such information be considered an admission of liability of the United States or by any person referred to in those conclusions or statements.

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